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SEMENOV'S ROLE IN THE DEVELOPMENT OF CHEMICAL KINETICS
(ON HIS 50th BIRTHDAY)

S. Z. Roginskiy,
 Corr Mem, Acad Sci USSR

Academician Nikolay Nikolayevich Semenov, founder of the Institute of Chemical Physics, discovered the "chain reaction" in chemical kinetics, i.e., a reaction between two molecules does not end with their transformation, but brings forth a whole chain of new transformations with the activation of other molecules. Under certain conditions one active molecule is able to effect the appearance of two new active particles. Semenov was the first to apply the "chain theory" to ordinary chemical reactions. This served as a starting point for a long series of brilliant works which greatly changed our ideas about the laws and mechanics of chemical processes.

Co-workers who assisted in research and experimentation which led to the discovery of the chain theory were V. A. Fok and A. F. Balter. Semenov's teacher was Academician A. F. Ioffe, whom Semenov served as chief assistant not only in scientific work, but also in the organization of a physicochemical institute with several branches, and in the creation of an engineering-technical faculty at the Leningrad Polytechnical Institute.

One of the results of the series of experiments based on the chain theory was a monograph, "Chain Reactions," published in the USSR and in England. This monograph soon became a generally recognized classic which to a considerable extent determined the later development of modern chemical kinetics.

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